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Remarks

Support for the addition of the term "through said channels" is found, *inter alia*, at page 3, lines 24. Support for the addition of the term "from the surface of said device towards said support" is found, *inter alia*, at page 11, lines 3-6.

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow. Support for the amendments is found at p. 11, lines 4-5 of the specification. The Applicants do not agree with the Examiner's assertions regarding the cited art, and the statements below are to be read in addition to arguments previously made. The present amendments are made without prejudice to further prosecution and are made in order to secure quick allowance of clearly allowable subject matter.

Claims 1-2, 5-6, 9, 18-20, 22-24, 26 and 36 are rejected under 35 U.S.C. 102(b) as allegedly being anticipated by Brecht. The present claims recite that the "support, optically functional layer, attachment layer, and analyte specific receptive layer are configured and arranged (i) to provide channels through each of said layers that are continuous with said channels in said support; and (ii) to provide laminar flow of sample through said channels of said device from the surface of said device towards said support when a fluid sample is introduced into said device."

The device of Brecht discloses layers of amine group, carboxyl groups, dextrane, and atrazine-caproic acid. The Examiner seems to be asserting that these layers correspond to the optically functional layer, attachment layer, and analyte specific receptive layer in the presently claimed invention (Brecht, p. 292, left column, lines 5-26), and that the support is the chip (p. 292, left column, line 28-29). These chips do not contain channels as the claims require. Therefore, Brecht does not anticipate the present claims.

Furthermore, the layers are not configured (i) to provide channels through each of said layers that are "continuous with said channels in said support" and (ii) to provide laminar flow of

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sample through said channels of said device from the surface of said device towards said support when a fluid sample is introduced into said device," as also required by the claims.

The Examiner stated in the Office Action mailed 4/4/01 (Paper #15) that the limitation "through the layers" is interpreted as satisfied by sample traversing the analyte receptive layer. But each layer of the device is recited as a separate limitation and the plain language of the claim clearly indicates that the sample must flow through the channels from the surface of the device and towards the support, and not merely traverse the outer layer. For all of these reasons, Brecht does not anticipate the cited claims.

The Examiner rejects claims 1-2, 5-6, 9, 18-20, 22-24, 26, and 36 under 35 U.S.C. 103(a) as allegedly being unpatentable over Oberhardt.

The Applicants point out that the Oberhardt reference does not disclose an optically functional layer, an optical property of which is detectably altered upon a change in mass on the optically functional layer related to analyte binding, as the present claims recite. The Examiner asserts that the broad generic definition of what is meant by 'optically functional layer' is inclusive of Oberhardt-type layers (Office Action mailed 6/24/03, p. 6). But additional limitations are recited in the claims that the Examiner is not considering. The plain language of the claims clearly states that an optical property is **detectably altered upon a change in mass**. In Oberhardt, the optical property (change in solution color) (Oberhardt, Col. 29, line 40-Col. 30, line 26) is not altered upon a change in mass, but rather not until the antibody-enzyme conjugates are bound and substrate added. Therefore, Oberhardt is outside of the present claims based on their plain meaning. Oberhardt also completely fails to provide any motivation for utilizing a detection method based on mass change, because his device is designed for a completely different purpose, which is an ELISA assay. Indeed, modifying Oberhardt as the Examiner suggests would make Oberhardt unsatisfactory for its intended purpose, which clearly indicates Oberhardt does not render the present claims obvious MPEP 2143.01.

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The Examiner also rejects claims 1-7, 18-1, 21, 23, 25, 36, and 38-43 under 35 U.S.C. 103(a) as allegedly being unpatentable over the Walt patent.

The Walt patent does not disclose a device having the configuration recited in the present claims. The claims recite that the support, optically functional layer, attachment layer, and analyte specific receptive layer are configured and arranged (i) to provide channels through each of said layers that are **continuous** with said channels in said support; and (ii) to provide laminar flow of sample through said channels of said device when a fluid sample is introduced into said device.

Walt does not disclose a support and the recited layers having channels in the support that are continuous with channels in each of the layers. If the Examiner believes that the wells formed at the terminal ends of optical fibers of the bundle (Col. 4, lines 4-8) are channels, it is pointed out that they are certainly not continuous with any channels of the other layers (which are not even disclosed by Walt).

The Examiner asserts that the limitation concerning laminar flow is related to use of the device, and not the device itself. But the claims recite precise physical features of the device, namely, that the layers are configured in a particular manner, i.e., to provide for laminar flow. Therefore, the recited element is not merely related to how the device is used, but is a physical description of the device that must be considered. Furthermore, any alleged channels of Walt certainly are not configured to provide for laminar flow, as the Walt patent completely fails to disclose any purpose or motivation for utilizing laminar flow. With reference to claims 39-43, Walt does not disclose an attachment layer comprising diamond-like carbon, nor does Walt provide for nonspecific capture of an analyte.

If the Examiner believes the arguments above are not persuasive, it is respectfully requested that the Examiner specifically and clearly point out where he believes each element of the claim is found in any cited reference.

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The Examiner rejects claims 1-2, 5-12, 23-24, 26-34, and 36-50 under the judicially-created doctrine of obviousness-type double patenting. The Applicants will provide a terminal disclaimer if co-pending case 09/675,518 if the presently pending claims in both the present case and the co-pending case are passed to allowance in their present form.

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Conclusion

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date Sept. 12, 2003

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